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S.B. NO. 3167

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# A BILL FOR AN ACT

RELATING TO STREET LIGHTING.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

1           SECTION 1. The legislature finds that improperly aimed  
2 lighting can produce unsafe conditions such as glare and deep  
3 shadows and can contribute to light pollution of the night sky.  
4 Whereas properly directed lighting can save in operation costs,  
5 resulting in a more efficient use of tax dollars to pay for  
6 state-funded light fixtures. The legislature further finds that  
7 properly aimed lighting can minimize light trespass and  
8 pollution, reduce glare, and improve the view of the night sky,  
9 thereby preserving one of Hawaii's natural resources.

10           The legislature also finds that fully shielded lighting  
11 units considerably reduce light pollution. The replacement of  
12 unshielded lighting units with fully shielded lighting units can  
13 result in the substantial lowering of the lamp wattage needed to  
14 maintain an equivalent level of lighting on the ground, thereby  
15 realizing a considerable energy savings to the State.  
16 Therefore, it is in the public interest to require the use of  
17 fully shielded lighting units to the maximum extent possible.



1       The purpose of this Act is to provide a regulatory strategy  
2 for outdoor lighting that will:

- 3       (1) Curtail and reverse the degradation of the nighttime  
4       environment and the night sky;
- 5       (2) Minimize glare, obtrusive light, and artificial sky  
6       glow by limiting outdoor lighting that is misdirected,  
7       excessive, or unnecessary;
- 8       (3) Permit reasonable uses of outdoor lighting for night-  
9       time safety, utility, security, productivity,  
10      enjoyment, and commerce;
- 11      (4) Conserve energy and resources to the greatest extent  
12      possible; and
- 13      (5) Preserve the dark night sky for astronomy.

14      SECTION 2. Chapter 264, Hawaii Revised Statutes, is  
15 amended by adding a new part to be appropriately designated and  
16 to read as follows:

17      **"PART . SHIELDED HIGHWAY AND STREET LIGHTING FIXTURES**

18      **§264- Definitions.** As used in this part:

19      "Direct light" means light emitting generally in a downward  
20 direction by a lamp, off a reflector or through a refractor of a  
21 lighting unit.



1 "Fully shielded lighting unit" means a lighting unit that  
2 is constructed in such a manner that all light emitted, either  
3 directly from the lamp or indirectly by reflection or refraction  
4 from any part of the lighting unit, is projected below the  
5 horizontal plane of the lamp.

6 "Glare" means direct light emitted by a lighting unit that  
7 causes reduced visibility of objects or momentary blindness.

8 "Lamp" means the component of a lighting unit that produces  
9 light.

10 "Light pollution" means a general sky glow caused by the  
11 scattering of artificial light in the atmosphere.

12 "Lighting unit" means a complete lighting unit, including a  
13 lamp or lamps together with the parts designed to distribute the  
14 light, to position and protect the lamps and to connect the  
15 lamps to the power supply.

16 "Lumen" means a specific standard unit of measurement of  
17 luminous flux.

18 "Outdoor light fixtures" means outdoor artificial  
19 illuminating devices, installed or portable, used for flood-  
20 lighting, roadway and area lighting, general illumination or  
21 advertisement.



1 "Partially shielded lighting unit" means a lighting unit  
2 that is constructed in such a manner that more than zero but  
3 less than ten per cent of the light emitted, either directly  
4 from the lamp or indirectly by reflection or refraction from any  
5 part of the lighting unit, is projected above the horizontal  
6 plane of the lamp.

7 "Permanent outdoor lighting unit" means any fixed lighting  
8 unit or system of lighting units that is outdoors and that is  
9 intended to be used for seven days or longer.

10 "Roadway lighting" means permanent outdoor lighting units  
11 that are specifically intended to illuminate roadways for  
12 automotive vehicles.

13 "Unshielded lighting unit" means a lighting unit that is  
14 constructed in such a manner that more than ten per cent of the  
15 light emitted, either directly from the lamp or indirectly by  
16 reflection or refraction from any part of the lighting unit, is  
17 projected above the horizontal plane of the lamp.

18 **§264- Highway and street lighting control.** (a) The  
19 installation of any new or replacement permanent outdoor  
20 lighting unit by the department of transportation for the  
21 lighting of highways or streets shall meet the following  
22 conditions:



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1 (1) The new or replacement lighting unit permits are no  
2 more than two per cent of the total lumen in the zone  
3 of ninety to one hundred eighty degrees vertical angle  
4 if the rated output of the lumen is greater than  
5 thirty-two hundred lumens;

6 (2) The minimum lighting allowance specified by an  
7 applicable recommendation or regulation shall be used.  
8 The average minimum allowance adequate for the  
9 intended purpose shall be used if no lighting  
10 recommendation or regulation is applicable, giving  
11 full consideration to energy conservation and glare;  
12 and

13 (3) Adequate consideration shall be given to conserving  
14 energy and minimizing glare and light pollution.

15 (b) The following shall be exempt from the requirements of  
16 subsection (a):

17 (1) Where federal laws, rules, or regulations preempt  
18 state laws or rules;

19 (2) Where fire, police, rescue, or repair personnel need  
20 light for temporary emergencies or road repair work;

21 (3) Where there are special requirements, such as sports  
22 facilities, historic decorative considerations, or



1 flag or monument lighting. All such lighting shall be  
 2 selected and installed to shield the lamp or lamps  
 3 from direct view to the greatest extent possible and  
 4 to minimize upward lighting and light pollution;

5 (4) Where there is substantial nighttime pedestrian  
 6 traffic in an urban area and an engineer experienced  
 7 in outdoor lighting has deemed it necessary to permit  
 8 the installation of partially shielded lighting units;  
 9 and

10 (5) Where it has been determined that a reasonable safety  
 11 and security interest exists that cannot be addressed  
 12 by another method without increasing the cost or  
 13 reducing the effectiveness of the lighting.

14 **§264- Rules.** The department of transportation shall  
 15 adopt rules for the efficient implementation of this part."

16 SECTION 3. Chapter 46, Hawaii Revised Statutes, is amended  
 17 by adding a new section to part I to be appropriately designated  
 18 and to read as follows:

19 **"§46- Highway and street lighting; standards.** The  
 20 installation of new lighting units and the replacement of  
 21 existing lighting units for highways and streets under the



1 control of a county shall be in accordance with part of  
2 chapter 264."

3 SECTION 4. (a) Not later than December 31, 2007, the  
4 department of transportation shall establish an implementation  
5 plan to retrofit all highway and street lighting units  
6 maintained by the department of transportation to the standards  
7 established under this Act. The implementation of the  
8 retrofitting plan shall be completed by December 31, .

9 (b) The department of transportation shall submit a report  
10 containing the implementation plan required under this section  
11 to the legislature not later than twenty days prior to the  
12 convening of the 2008 regular session. The department of  
13 transportation shall also submit an annual report to each  
14 succeeding legislature not later than twenty days prior to the  
15 convening of each subsequent regular session on the status of  
16 retrofitting the highway and street lighting units maintained by  
17 the department of transportation to the standards established  
18 under this Act. The department of transportation shall submit a  
19 final report on its completion of the retrofitting process  
20 required under this section no later than twenty days prior to  
21 the convening of the regular session.

22 SECTION 5. New statutory material is underscored.



1 SECTION 6. This Act shall take effect upon its approval.

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INTRODUCED BY:

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# SB. NO. 3167

**Report Title:**

Fully Shielded Street Lighting Fixtures; Required

**Description:**

Requires the State to install fully shielded lighting fixtures when replacing highway and street lights. Requires the counties to follow the same lighting standards as the State when installing new highway or street lights or replacing existing ones.

